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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,937	08/24/2001	Zohar Yakhini	10003516-1	2672

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EXAMINER	
SISSON, BRADLEY L	

ART UNIT	PAPER NUMBER
1634	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/938,937	YAKHINI ET AL.	
	Examiner	Art Unit	
	Bradley L. Sisson	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 January 2006 and 13 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) *1-9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 January 2006 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As set forth in *Enzo Biochem Inc., v. Calgene, Inc.* (CAFC, 1999) 52 USPQ2d at 1135, bridging to 1136:

> To be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.' " *Genentech, Inc. v. Novo Nordisk, A/S*, 108 F.3d 1361, 1365, 42 USPQ2d 1001, 1004 (Fed. Cir. 1997) (quoting *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993)). Whether claims are sufficiently enabled by a disclosure in a specification is determined as of the date that the patent application was first filed, see *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986).... We have held that a patent specification complies with the statute

> even if a "reasonable" amount of routine experimentation is required in order to practice a claimed invention, but that such experimentation must not be "undue." See, *e.g.*, *Wands*, 858 F.2d at 736-37, 8 USPQ2d at 1404 ("Enablement is not precluded by the necessity for some experimentation . . . However, experimentation needed to practice the invention must not be undue experimentation. The key word is 'undue,' not 'experimentation.' ") (footnotes, citations, and internal quotation marks omitted). In *In re Wands*, we set forth a number of factors which a court may consider in determining whether a disclosure would require undue experimentation. These factors were set forth as follows: (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. *Id.* at 737, 8 USPQ2d at 1404. We have also noted that all of the factors need not be reviewed when determining whether a disclosure is enabling. See *Amgen, Inc. v. Chugai Pharm. Co., Ltd.*, 927 F.2d 1200, 1213, 18 USPQ2d 1016, 1027 (Fed. Cir. 1991) (noting that the *Wands* factors "are illustrative, not mandatory. What is relevant depends on the facts.").

For convenience, claim 10, the sole independent claim under consideration on the merits, is reproduced below.

10. (Currently Amended) A method of assaying target nucleic acid molecules by tagging and sorting the target molecules, comprising the steps of:

a) providing a first plurality of nucleic acids, ~~wherein each nucleic acid of the first plurality is different from other nucleic acids in the first plurality, and~~ wherein the first plurality of nucleic acids ~~are~~ is immobilized on a surface such that different sequences of the first plurality of nucleic acids can be differentiated by location, wherein the nucleic acid at each location has a different nucleotide sequence than nucleic acids at other locations;

b) providing a second plurality of nucleic acids, wherein the nucleotide sequence of each second nucleic acid of the second plurality is known and comprises a first region and a second region, wherein each first region of each ~~second~~ nucleic acid at a particular location has a different nucleotide sequence from other first regions of other nucleic acids in the second plurality at other locations, wherein ~~the~~ each first region of ~~each second~~ nucleic ~~acid~~ acids of the second plurality is complementary to a ~~different first~~ nucleotide sequence of nucleic ~~acid~~ acids of the first plurality, wherein at least one second region of the ~~second~~ nucleic acids in the second plurality is complementary to a target nucleic acid in a biological ~~sample~~ target, wherein each nucleic acid of the first plurality and each second region of each ~~second~~ nucleic acid of the second plurality comprise unstructured nucleotides such that the second region ~~of each second nucleic acid~~ has a reduced ability to hybridize to a first nucleic acid of the first plurality having a complementary nucleotide sequence without reducing the ability of the second region of each ~~second~~ nucleic acid of the second plurality to hybridize to a complementary nucleic acid molecule in a biological ~~sample~~ target;

c) providing a biological ~~sample~~ target containing nucleic acids to be analyzed;

d) contacting the biological ~~sample~~ target with the second plurality of nucleic acids under conditions that permit hybridization of complementary nucleotide sequences between the target nucleic acid molecules ~~in the sample~~ and the second region of ~~a second~~ nucleic acids of the second plurality;

e) contacting the second plurality of nucleic acids with the first plurality of nucleic acids under hybridization conditions ~~that permit hybridization of complementary sequences between the first region of a second nucleic acid of the second plurality and the first nucleic acids in the first plurality~~;

f) detecting nucleic acids in the biological ~~sample~~ target that have hybridized to a nucleic acid of the second plurality by detecting a signal of a label that is part of the nucleic

acids ~~chosen from at least one of~~ of the biological ~~sample and the second plurality of nucleic acids~~ target;

g) determining a ~~position~~ location ~~on the substrate~~ of the detectable signal of the label on the surface; and

h) determining the nucleotide sequence of the nucleic acid in the biological ~~sample~~ target that has hybridized to a nucleic acid of the second plurality by correlating the ~~position~~ location of the signal to the nucleotide sequence.

3. In reviewing the claimed method, it is understood that there are three separate nucleic acids involved in the reaction:

a. A first plurality of nucleic acids, which are fixed to a support, that each member located at a position on a support has a different nucleotide sequence, that each member comprises "unstructured nucleotides" and is complementary to a first region of a nucleotide found in a second plurality.

b. A second plurality of nucleic acids that comprises a first and second region. The first region is complementary to a nucleic acid of the first plurality (a). The second region of a member of the second plurality comprises "unstructured nucleotides" and may also be complementary to a member of the first plurality, but would have "reduced ability to hybridize to a first nucleic acid of the first plurality."

c. A biological target containing nucleic acids to be analyzed, and which is to hybridize to the second region of a member of the second plurality of nucleic acids, and which comprises a detectable label.

4. Upon review of the method of claim 10, it is apparent that the members of the first population may be complementary to both first and second regions of member(s) of the second plurality. With such being the case, one would also achieve hybridization between the first

and/or second regions of members of the second plurality with the target nucleic acid. Additionally, the method fairly encompasses embodiment where the target hybridizes to a member of the first plurality. While one is to deduce the nucleotide sequence of the target by its placement on the support, which involves the formation of a tripartite complex, the specification is essentially silent as to how one is to deduce the nucleotide sequence of a target when there is no correlation between the second part of a member of the second plurality and any member of the first plurality, for while a second member could be complementary to the target, it could be complementary to a member of the first plurality, and/or complementary to a first region of the same or different member of the second plurality. Furthermore, the target nucleic acid could bind directly to the immobilized member of the first plurality, and thereby eliminate the formation of a tripartite complex, and/or bind non-specifically to the support, and/or form a triplex structure with other sequences. Again, the specification is essentially silent as to how such test results are to bed interpreted.

5. In view of the breadth of scope clamed, the limited guidance provided, the unpredictable nature of the art to which the claimed invention is directed, and in the absence of convincing evidence to the contrary, the claims are deemed to be non-enabled by the disclosure.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 10-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 10 is confusing where at line 3 of step "b)" reference is made to "each first region of each nucleic acid at a particular location." Upon review of the claim, it appears that the members of the first plurality of nucleic acids have not been defined in terms of their having first and second regions, but rather, members of the second plurality have been so defined. Yet, it is the members of the first plurality that have been defined as being fixed at specific locations on a support. Accordingly, it appears that properties of the first and second plurality of nucleic acids are being incorrectly assigned/referenced.

9. Claim 10 is confusing as to how the second region of a member of the second plurality of nucleic acids is defined in terms of its being able to hybridize to both the target nucleic acid and to a member of the first plurality of nucleic acids. Seemingly, it is the first region of a member of the second plurality that hybridizes to a member of the first plurality. And if it is possible for the second member to hybridize to both the target and a member of the first plurality, it is less than clear how one would be able to determine the nucleotide sequence of the target.

10. Claims 11-14, which depend from claim 10, fail to overcome these issues and are similarly rejected.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley L. Sisson whose telephone number is (571) 272-0751. The examiner can normally be reached on 6:30 a.m. to 5 p.m., Monday through Thursday.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bradley L. Sisson
Primary Examiner
Art Unit 1634

BLS
21 February 2006